

CLAIMS

1. A base station apparatus for communicating with a plurality of subscriber stations in a TDMA wireless communication manner, comprising:

an interference time slot database for registering/storing thereinto a communication time slot in which interference happens to occur; and a TDMA control unit for executing reallocation/rearrangement of time slots communicating with the respective subscriber stations in response to a change in a traffic based upon the interference time slot information of the interference time slot database,

wherein when interference is detected in a predetermined time slot received from a subscriber station, said interference time slot information is registered into said interference time slot database, and blocking information of an interference time slot is transmitted to said subscriber station; the time slot reallocation/rearrangement are carried out based upon registered information of said interference time slot database; and also time slot reallocation/rearrangement information is transmitted to the respective subscriber stations.

2. A TDMA wireless communication system in which a base station communicates with a plurality of subscriber stations in a wireless manner,

wherein the base station comprises: an interference time

slot database for registering/storing therein a communication time slot in which interference happens to occur; and a TDMA control unit for executing reallocation/rearrangement of time slots communicating with the respective subscriber stations in response to a change in a traffic based upon the interference time slot information of the interference time slot database,

wherein when interference is detected in a predetermined time slot received from the base station, said subscriber station transmits interference time slot information to said base station,

wherein the base station which has received the interference time slot information registers said interference time slot information into said interference time slot database, performs the time slot reallocation/rearrangement based upon registered information of said interference time slot database, and also transmits time slot reallocation/rearrangement information to the respective subscriber stations.

3. A TDMA wireless communication system in which a base station wireless-communicates with a plurality of subscriber stations by an up-stream line TDMA system and a down-stream line TDM system,

wherein the base station comprises: an interference time slot database for registering/storing therein a communication time slot in which interference happens to occur; and a TDMA

control unit for executing reallocation/rearrangement of time slots communicating with the respective subscriber stations in response to a change in a traffic based upon the interference time slot information of the interference time slot database, and also transmits up-stream TDMA time slot reallocation/rearrangement information to the respective subscriber stations every predetermined frame in a down-stream TDM line,

wherein each of said subscriber stations monitors as to whether or not there is the up-stream TDMA time slot reallocation/rearrangement information addressed to the own subscriber station, which is transmitted from said base station every predetermined frame, and when said up-stream TDMA time slot reallocation/rearrangement information cannot be received, said subscriber station judges an occurrence of interference and transmits said occurrence of interference to the base station, and

wherein the base station which has received the occurrence of interference registers the interference occurrence information into said interference time slot database, and transmits time slot reallocation/rearrangement information to the respective subscriber stations based on the registered information saved in the interference time slot database.

4. A TDMA wireless communication system in which a base station communicates with a plurality of subscriber stations in

a wireless manner,

wherein time slot allocations/arrangements of the respective subscriber stations are changed all at once every super frame of a TDMA frame, and

5 wherein a base station transmits to the respective subscriber stations, subsequent time slot reallocation/rearrangement information with different time slot arrangements in a plurality of frames within a super frame period.

10 5. A base station apparatus in which while a service area of the own base station is subdivided into a plurality of sectors, the base station communicates with a plurality of subscriber stations in a TDMA wireless communication manner, comprising:

an interference time slot database for  
15 registering/storing thereinto a communication time slot in which interference happens to occur; and a TDMA control unit for executing reallocation/rearrangement of time slots communicating with the respective subscriber stations in response to a change in a traffic based upon the interference time slot information  
20 of the interference time slot database,

wherein when the time slot reallocation/rearrangement are carried out, the TDMA control unit reallocates/rearranges the time slots in this order of a subscriber station of such a sector where no interference happens to occur, and thereafter, another

subscriber station where interference does not occur among sectors where the interference occurs.

6. The base station apparatus as claimed in claim 5, wherein the interference time slot database manages the interference time slot information every sector.

7. A base station apparatus for communicating with a plurality of subscriber stations in a TDMA wireless communication manner, comprising:

an interference time slot database for registering/storing thereinto a communication time slot in which interference happens to occur; and

a TDMA control unit for executing reallocation/rearrangement of time slots communicating with the respective subscriber stations in response to a change in a traffic based upon the interference time slot information of the interference time slot database,

wherein when interference is detected in a predetermined time slot received from a subscriber station, said interference time slot information is registered into said interference time slot database, and blocking information of an interference time slot is transmitted to said subscriber station; the time slot reallocation/rearrangement are carried out based upon registered information of said interference time slot database; and also time slot reallocation/rearrangement information is transmitted to

the respective subscriber stations, and

wherein on the other hand, in the case that said interference time slot is received for a predetermined time period and the interference disappears, the interference time slot information registered into said interference time slot database is deleted therefrom.

8. The base station apparatus as claimed in claim 7, wherein said base station apparatus comprises an interference erroneous detection database, and registers said interference time slot information which has been deleted from said interference time slot database into said interference erroneous detection database.

9. The base station apparatus as claimed in claim 8, wherein when the same interference time slot information whose total number is larger than, or equal to a preselected number is registered into the interference erroneous detection database within a predetermined time period, said base station apparatus transmits an abnormal state to a central station for managing the base station.

10. The base station apparatus as claimed in claim 8, wherein when the same interference time slot information whose total number is larger than, or equal to a preselected number is registered into the interference erroneous detection database within a predetermined time period, said base station apparatus

increases an interference judging threshold value used to detect an occurrence of interference.

11. A TDMA wireless communication system in which a base station communicates with a plurality of subscriber stations in a wireless manner,

wherein the base station comprises: an interference time slot database for registering/storing thereinto a communication time slot in which interference happens to occur; and a TDMA control unit for executing reallocation/rearrangement of time slots communicating with the respective subscriber stations in response to a change in a traffic based upon the interference time slot information of the interference time slot database,

wherein when interference is detected in a predetermined time slot received from the base station, said subscriber station transmits interference time slot information to said base station,

wherein the base station which has received the interference time slot information registers said interference time slot information into said interference time slot database, performs the time slot reallocation/rearrangement based upon registered information of said interference time slot database, transmits time slot reallocation/rearrangement information to the respective subscriber stations, and on the other hand, transmits an instruction signal to said subscriber station, said

instruction signal causing said subscriber station to receive said interference time slot for a predetermined time period, and

wherein said subscriber station which has received said instruction signal receives said interference time slot for a predetermined time period, and when the interference disappears, said subscriber station sends a request to said base station, said request requesting a deletion of said interference time slot information registered into said interference time slot data.

12. The TDMA wireless communication system as claimed in claim 11, wherein an interference erroneous detection database is provided on the side of either the base station or the subscriber station, and the interference time slot information deleted from the interference time slot database is registered into said interference erroneous detection database.

13. The TDMA wireless communication system as claimed in claim 12, wherein when the same interference time slot information whose total number is larger than, or equal to a preselected number is registered into the interference erroneous detection database within a predetermined time period, an abnormal state is transmitted to a central station for managing the base station.

14. The TDMA wireless communication system as claimed in claim 12, wherein when the same interference time slot information whose total number is larger than, or equal to a preselected number is registered into the interference erroneous detection database



within a predetermined time period, an interference judging threshold value used to detect interference is increased.

15. A subscriber station apparatus for communicating with a base station in a TDMA wireless communication manner,

5 wherein when interference is detected in a predetermined time slot received from the base station, said subscriber station apparatus transmits interference time slot information to said base station, and when said subscriber station receives said interference time slot for a predetermined time period and the  
10 interference disappears, said subscriber station transmits interference disappear information to said base station.

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